The Significance of Credits and Subsidies in Russian Agriculture

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Radical agrarian reform of the type that has occurred in China, Vietnam, Albania, and Armenia, does not appear to be on the horizon in Russia.[1] Consider, for example, that in January 1991 the president of Armenia launched a major land reform program, and by December of that year 715 out of 812 state-owned farms had been re-organized into 167,000 individual farms and 9500 private cooperatives.[2] In December 1991 President Yeltsin issued the decree "On Immediate Measures for Implementation of Land Reform." This decree required state-owned forms to re-register as a new organizational form. The organizational possibilities ranged from individual farms to a limited partnership in which all the state or collective farm's land and asset shares would be pooled. A political battle developed because the options did not include re-registering as a state or collective farm, and in March 1992 this form of re-registration was allowed. As of October 1993, 34% of state-owned farms had re-registered under their former status, 46% had re-registered as limited partnerships, and only 12% had re-registered as cooperatives or farmers' associations.[3]

One explanation for the resistance to change in the rural areas of Russia is cultural: communal rights and collective responsibility are an enduring feature of the Russian countryside. In accounts of the development of market economies in Western Europe, a

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[1]The agricultural reforms in Russia and China were not intended to be radical, and they did not involve the establishment of private ownership of land, the elimination of state procurement, or the full liberalization of input, ouput, and credit markets. Nonethess, they were radical in the sense that they radically changed the organizational and decision-making loci in agriculture and they produced a large and rapid increase in productivity. See Justin Yifu Lin, "Rural Reforms and Agricultural Growth in China", *American Economic Review* No. 82:2 (May 1992). After the initial rapid gains in productivity, growth has tapered off, and the need for more extensive reforms is apparent. See Prabhu L. Pingali and Vo-Tong Xuan, "Vietnam: Decollectivization and Rice Productivity Growth," *Economic Development and Cultural Change*, Vol 40:4 (July 1992) pp. 697-718.

[2]Gonzalo Pastor and Amer Bisat, "Armenia: Reform and Growth in Agriculture" (IMF PPAA/93/3: Feb. 93) p. 2.

[3]Reorganizatsiya kolkhozov and sovkhozov po sostoyaniyu na 1.09.93 (Goskomstat).

similar argument was often used to structure that history as a struggle between rural communalism and the extension of markets. Peasants clung to old institutions and traditional ways of doing things. Rural political and economic elites struggled for agricultural development through consolidation, privatization, mechanization, cash crops and integration into national markets.

Recent work in Western European history has strongly challenged this traditional story.[4] An account has emerged of peasants supporting markets and private property in conflict with elites who promoted collective property and confiscatory procurement systems. A historian of rural France before the French revolution has declared, "In contrast to what historians have generally assumed, the wealthiest segments of the village community proved the most devoted to communal lands and the poorest the most opposed."[5] The key point is that ambiguous property rights and extensive government support for agriculture are in the interest of those who control the political process.

The failure of agrarian reform in Russia is at least in part evidence of the political power of rural elites and the economic return that they enjoy from that power. As one leader of a local association of peasant farms explained,

> Yeltsin's decree on the purchase-sale of land will not work, as the majority of present laws and decrees are not working. Why?...Because today is planted a dictatorship not of laws but of power. If the rayon general-governor wants to oppress me -- let there be no doubt he will do so, and there are no laws that can save me. Everything is as it was before: if the first secretary of the city wants to remove me, he will remove me.[6]

The connection of the representatives of agrarian interests to Soviet-era political structures is obvious. The career of Vasilii Starodubtsev is illustrative. Under the USSR

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[4]For a review, see Robert Bates, "Lessons from History", *World Politics* 40:4 (1988) pp. 517-41.

[5]Kathryn Norberg, "Dividing up the Commons: Institutional Change in Rural France, 1789-1799", *Politics & Society*, Vol 16, No. 2-3 (June-Sept. 1988) pp. 265-86.

[6]Quoted in Stephen K. Wegren, "Yel'tsin's Decree on Land Relations: Implications for Agrarian Reform", Post-Soviet Geography, Vol. XXXV (March 1994) p. 173.

he was head of the USSR Peasants' Union, a semi-official body that farm managers and bureaucrats dominated. He participated in the group that staged the August 1991 attempted coup and is now a leading figure in the Agrarian Union, the party that purportedly represents rural interests. One does not need a strong theory of the "true" or "objective" interests of the rural masses to suspect that he does not effectively represent them.

In any case, active discussion, debate and experimentation is crucial for the articulation of rural interests and for stimulating the process of rural development. Thus the development of local democracy is crucial. After the August 1991 coup, Yeltsin received the right to appoint regional governors until regional elections took place. The "democrats," fearful that they would lose in the majority of regions, had these elections postponed. Local elections still have not taken place. Attempts to divide Russian political actors into democrats and non-democrats and promote democracy by promoting the fortunes of particular individuals and political groups have failed dramatically. A highly damaging result of the attempts is that federal support for the democratic process at the regional level is wholly lacking.

Local democracy itself will not be enough to bring about institutional change and rural development. Local stakes in the process of local economic development need to be raised. This can be pursued in two ways. First, the potential return to rural development can be raised by economy-wide reforms at the federal level. This means macroeconomic stabilization, reducing domestic regulation, reducing taxes, liberalizing foreign trade, and promoting privatization. Such reforms raise the return to rural development by increasing opportunities. Second, the economic return derived from existing political structures needs to be cut. This means that subsidies and state-directed credits for agricultural enterprises need to be cut.

This paper will examine how agricultural credits and subsidies have affected agricultural reform in Russia. The first section will consider the role of government

subsidies in the effort to promote private farms. The second will consider the impact of state procurement and state procurement subsidies on the development of marketing and distribution channels. The third section will look at subsidies that cover part of the cost of agricultural inputs. The final section will examine general producer subsidies and their relationship to agricultural output adjustment.

Overall, the attempts to support agriculture through subsidies and credits have limited rural development and contributed to weak, inefficient agriculture. Credits for individual farmers have not been structured to promote the success of efficient farmers. Input and procurement subsidies have strengthened the privileged position of enterprises with connections to the government, and producer subsidies have encouraged high-cost producers who can claim a more pressing need for additional funds. Such outcomes are not unexpected or distinctive to Russia. They are consistent with outcomes observed in a considerable body of world-wide experience.[7]

While agricultural policy in Russia had been poorly structured and largely unsuccessful, some basic trends have helped to create forces for change. The first is that state tax revenues have been falling, and hence the spending capacity for agricultural policy has been falling. Total federal transfers to agriculture fell from 10% to 4% of GDP from 1992 to 1993, and budgeted transfers for 1994 are about 2% of GDP.[8] Thus the government's budgetary difficulties have helped to constrain the implementation of ineffective agricultural policies.

The second force for change in agricultural policy is the increasingly obvious breakdown of the executive capacity of the government. The increasing executive

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[7]See Anne O. Krueger, *The Political Economy of Agricultural Pricing Policy*, Vol. 5, *A Synthesis of the Political Economy in Developing Countries* (Washington, 1992) esp. pp. 88-90.

[8]The federal transfer share is calculated from Lev Freinkman, "Government financial transfers to the enterprise sector in Russia: general trends and influence on country macroeconomic performance", memo May 1994. The 1994 figue is calculated from the approved federal budget, published in Rossiiskie Vesti, 6 July 1994.

difficulties reduce the "security" associated with traditional state institutions and reduce the return to the pursuit of support under government agricultural policies. Such support, even if promised, is often not delivered, and side payments to facilitate the fulfillment of state programs have been increasing. Such implementation failures may over time reduce political support for federal agricultural programs and encourage private rural initiative.

I. Promoting Private Farming

While personal subsidiary plots have long played a key role in Russian agriculture, legislation enabling independent private farms was enacted only in December of 1990. This legislation provided three means for the formation of private farms. One is that a member of a collective or state farm could claim his or her share of land and equipment from the collective and exit to form a small farm. State and collective farms were also required to turn over of portion of their "underutilized" land to the local Soviet. This land is to be distributed to other persons who wanted to become farmers. Persons who want to become farmers can also buy land from the state or lease it from other owners.

In addition to providing enabling legislation, the Russian government also provided subsidies for private farmers. In the spring of 1991 the Russian government provided a billion rubles to the newly formed Association of Peasant Farms and Cooperatives (AKKOR) in order to promote the development of independent farms. These funds were used in part to build up AKKOR, which set up a central office in Moscow and affiliates in all the regions of Russia. Budgetary funds and credits were also distributed to the regional affiliates based on their number of farmers and acreage that that farmers held. The governing committee of the local affiliate made the ultimate decisions about the allocation of credit.

The availability of credit probably played an important role in the growth of the number of farmers. The nominal volume of federal support for farmers increased sharply in 1992, as did the number of farmers (see Table 1). In 1992 the amount of credit allocated through the Farmer Support Fund, an AKKOR affiliate, amounted to Rb 430,000 per farm. This credit was issued at 7% interest per year. About 60% of the credit was one-year credit and 40% was five-year credit.[9] In light of the very high inflation rate (1800% in 1992), this credit was virtually equivalent to a subsidy. Given that the monthly industrial wage in mid-1992 was about Rb 6000, there was a substantial financial incentive to become a private farmer.

Table 1
State Support for Independent Farms

year	# of farms (ths.)	budgetary subsidy	central credit	CPI	real sub. per farm	real crd. per farm
1991	24.5	1		1	40.8	
1992	129	55	79	14.5	29.3	42.1
1993	258	22	288	145	0.59	7.7
1994	286	127		886	0.50	

Notes and sources: Subsidy and credit figures are in blns. of Rb Real subsidy and credit figures are ths of 1991 Rb per farm. The figure for number of farms is a mid-year (1 July) figure. Budgetary subsidies are from personal communication, Freinkman, Government Financial Transfers, Table 2, and Rossiickie vesti, 6 July 1994. The budget figure for 1994 has been multiplied by .51, the implementation factor from 1993. Central credit figures are from the Russian Farmers' Fund, where the 1993 figure has been scaled up from a year-to-date figure for 20 Sept. 1993.

Credit appears as a major item in the operating balance of the new independent farmers. Table 2 shows a simple operating balance for farmers based on large surveys at then end of 1992 and 1993.[10] The ratio of credit to gross revenue was 1.8. This heavy role of debt is exactly the opposite of what would occur under a market-oriented

[9]Information received from the Farmer Support Fund, Moscow.

[10]Krect'yanskie (fermerskie) khozyaistva rossiiskoi federatsii (po dannym obsledovaniya na 1 yanvarya 1993 goda) (Goskomstat). Some results from a similar survey in 1994 were reported in Itogi khozyaistvennoi deyatelnocti krectyanskix (fermerskix) khozyaistv possiiskoi federatsii v 1993 godu (Goskomstat). A smaller independent survey found average debt of farmers at the end of 1992 to be 502 thousands rubles, a figure which is similar to the Goskomstat figure. More interestingly, 43% of farmers had no debt at all. See Karen Brooks and Zvi Lerman, "Land Reform and Farm Restructuring in Russia", World Bank Discussion Paper 233 (Feb. 1994).

competitive development of farming. Since information on the performance and credit worthiness of the new farmers is lacking, effective credit institutions would provide small amounts of credit and build upon accumulated performance information to expand credit to successful farmers. In addition, more pressure for self-financing would help to insure that farmers who were able to generate cash-flow from farming were the ones who expanded.

While the volume of credit received in 1993 fell in real terms, a larger share of credit appears to have been mobilized privately. In 1992 the average volume of credits that farmers received was 67% of the volume of credits issued through AKKOR, while in 1993 this figure rose to 134%. This shift suggest that private rural credit markets are developing. One would expect such markets to provide short-term credits, and in fact the share of short-term credits in the credit that farmers received rose significantly in 1993 (see Table 2). A small amount of evidence from China indicates that private credit in agriculture is about twice as large as the sum of that from the state agricultural bank and agricultural credit cooperatives.[11] Taken together, the evidence at least suggests that the possibilities for private credit arrangements for agriculture should not be ignored.

Table 2
Average Farm Balance Sheet

	1992	1993
gross receipts (ths. Rb)	226	1800
gross expenses (ths. Rb)	358	1700
credit received (ths. Rb)	408	1500
credit received (in '92 Rb)	408	150
long-term credit (%)	73%	47%
size of survey	40542	60000

Source: Goskomstat.

[11] Justin Yifu Lin, "Rural Factor markets in China after the Household Responsibility System Reform", mimeo, Yale University, Table 4.

Since 1992, a rising failure rate among independent farmers and dramatically slowing growth in the number of independent farms has accompanied the fall in federal support. Table 3 shows that failure rates have tripled among independent farmers since 1992. The problem is not that these failure rates are too high -- given that independent farming is a new and risky activity, one would expect significant failure rates. The problem is that the program to support independent farming has made state support the central feature of whether or not the farmer begins farming and whether or not the farmer has a positive cash flow.

Table 3
Farm Failure Rates

period	# of failed farms in period	% of active (end of period)
1992	5118	2.8
1'st half, 1993	5800	2.2
2'nd half, 1993	8300	3.1
1'st half, 1994	12100	6.6

Source: Goskomstat.

While it may be possible to give some land to every person who wants to work the land, certainly it is not possible to provide "sufficient" start-up capital to everyone who would like to become a farmer. The issue of who would be provided with start-up capital, and how state support would be divided between setting up new farmers and supporting already established farmers, was never openly addressed. This is not surprising, since such a question would focus on the allocation of capital within AKKOR, and hence be divisive.

A typical way of avoiding the issue was to treat it as an issue of technical expertise. As one Russian academic put it with respect to land distribution, "...not everyone has the right to land, but only the best of the best, those who are experienced

and who are trained professionals."[12] Such a view ignores the issue of who decides who is skilled and appropriately trained. An independent farmer is first and foremost a small business person. A major problem of post-communist economic transformation is that small business was systematically and effectively repressed. It is not possible or desirable to use the past to try to identify who will be successful in a future that must be much different from the past. Rather than obscuring a basically political process with hazy notions of expertise, the goal must be to develop a market process in which effective farmers can be identified because they have survived and earned profits.

In order for AKKOR to grow and to promote effectively private farming, it needs to shift away from distributing federal subsidies to a new, more market-driven mission. AKKOR's comparative advantage, as a Moscow-based bureaucracy serving a far-flung constituency, is in providing products with low transport costs and large economies of scale. A key example of such products are information products that can be replicated and distributed on electronic media. AKKOR already supports two journals containing articles of interest to farmers. AKKOR could expand its media offerings by providing software training tools for farms and agricultural product processing, and databases of information about agricultural input purchasing, irrigation techniques, new crop and seed varieties, and product marketing channels.[13]

[12]Quoted in Stephen K. Wegren, "Rural Reform and Political Culture in Russia", *Europe-Asia Studies*, Vol. 46, No. 2 (1994), p. 226.

[13]It is important that such services cover their cost of provision through a fee-for-subscription basis No organization can be expected to respond effectively to the needs of its customers until its customers are the primary source of its financing.

II. Procurement Credit and the Marketing of Agricultural Products

A characteristic feature of communist agro-industrial development is an obsession with production and underdevelopment of agricultural product processing, distribution, and marketing. This is evident in cross-country comparisons of food production costs allocated to sectors (see Table 4). As compared to the U.S., the share of agricultural production cost in total food production costs in the USSR was more than five times greater than the share in the U.S., while the share of processing and marketing costs was almost four times lower. A key task for agricultural reform is to foster rapid, market-based development of agricultural product processing and distribution.

Table 4
Sectoral Breakdown of Food Production Costs
(% of total food cost)

sector	U.S.	Britain	France	W. Germany	USSR
supply & services	33.0	24.0	22.7	23.8	20.0
production	12.0	16.2	38.0	22.0	65.0
processing & market'g	55.0	59.8	39.3	54.2	15.0

Source: Litvin, *Soviet Agro-Industrial Complex*, p. 17, cited in Edward C. Cook, "Agriculture's role in the Soviet economic crisis," in Michael Ellman and Vladimir Kontorovich, T*he disintegration of the Soviet economic system* (London, Routledge, 1992) p. 195.

The Scope of State Procurement

While the volume of state procurement has fallen significantly since the late 1980's, the state still purchases a significant share of major agricultural products (see Table 5). State procurement is used in part to fill federal and regional food funds. The melange of recipients of products from the federal food fund illustrates the Soviet method of resource allocation. For example , in 1993 the federal food fund was ordered to deliver 1.8 thousand tons of milk to the Russian meteorological service, 7.2 thousand tons of meat to

the tax service, and 65 million eggs to the joint stock company Gasprom, among other recipients. As Table 6 illustrates, government organs of various sorts are very significant customers of the federal and regional food funds.

Table 5
The Significance of State Procurement

product	procurement as % of prod'n, ave. 1986-90	procurement as % of prod'n, 1993	total volume of procurement 1993, ths. tons	total cost of procurement 1993, bil. Rub.
milk	72.1	52.4	24632	1188
meat	74.5	49.4	5273	1886
eggs	70.9	60.0	22789	476
grain	32.9	27.7	27968	1801
potatoes	22.4	4.4	1670	112
vegetables	66.5	21.7	2122	315
sugar beets	86.7	27.7	7064	176
sunflower	94.7	23.0	645	59

Source: Calculated from data from Goskomstat and Ministry of Agriculture.

Food markets in Russia have already developed to the point that individuals, including government workers, should be expected to be able to buy food for themselves. If institutions want to purchase food in bulk to provide food for their employees, they should make arrangements privately. Moreover, a natural path for reform is for the various government departments currently arranging food deliveries to re-organize themselves as private food wholesaling companies. Eliminating the state role in food procurement is a key step to stimulate the development of private marketing and distribution arrangements.

Table 6
Allocation of Food from Federal and Regional Food Funds
(ths. tons)

recipient	meat	milk	eggs	grain	sugar	vegetables
Moscow	550	4000	1430	1350	554	390
St. Petersburg	150	1400	800	700	270	190
military	492	2408	1362	1887	205	417
government organs	120	1530	374	2423	764	4
enterprises	57	436	358	0	329	16
regions	179	1489	94	17665	1368	209
others	21	600	1290	3613	398	0
total allocation from fed.and reg. food funds	1570	11863	5709	27638	3888	1235
planned size of fed. food fund	983	6042	5833	11828	784	1245
residual (reg. food fund, waste)	587	5821	-124	15810	3104	-10

Source: Postonovlenie Sovet Ministrov -- Provitelstvo Rossiiskoi Federatsii No. 155 (22 Feb. 1993), o formirovanii federalnykh i regeonalnyx prodovolstvennyx fondov v 1993 godu.

The Role of Subsidies and Credits

State subsidies and credits can to a significant extent explain the pattern of tbe state procurement share across products and over time in Table 5. Milk, meat, and eggs are products for which state procurement takes up the largest shares of production. As Section 4 discusses, these are products that have received the bulk of product-oriented production subsidies. Such subsidies naturally orient producers toward state marketing channels. Grain has seen the smallest drop in the share of state procurement. As Table 7 indicates, procurement credits for grain make up the bulk of procurement credits.

Table 7
Directed Credits for Agricultural Procurement
(bil. Rb)

	1992	1993	1994 budgeted
grain	641	1956	n/a
vegetables	128	229	n/a
rural retailers	41	90	n/a
other	0	165	n/a
total	809	2470	4600
as % of GDP	4.5	1.5	0.7

Source: Freinkman, "Government Financial Transfers", and Federal Budget Law, Rossiiskaya Vecti, 6 July 1994.

The apparent absence of state credit programs for the purchase of agricultural products other than grain and vegetables raises the question of why special credits are needed for these products. The need for credit does not appear to be associated with the process of regional redistribution of food, since the patterns for grain and vegetables are much different. Almost half of state procurement of vegetables is used to provision Moscow and St. Petersburg, while there are no regional vegetable funds. On the other hand, the total volume of grain in regional grain funds is about a third larger than the volume of grain in the federal fund, and regional grain transfers are large relative to total state deliveries of grain.

While grain procurement credit amounts to 80% of total state procurement credit, the cost of procuring grain is not a convincing rationale for issuing state credit for that purpose. As Table 5 indicates, the total cost of state purchases of other commodities, such as meat and milk, is about the same as the cost of state purchases of grain. Since most grain is harvested during August and September, there is significant seasonality associated with grain production. However, there is also significant seasonality associated with milk; in early summer milk production is about 2.5 times greater than in the winter.[14] Moreover, grain is an alternative to rubles as a store of value and it may provide a less risky form of wealth than rubles in the current environment of macroeconomic uncertainty.

[14]See Rossiya -- 1994, Graph VI.6, p. 168.

With the development and privatization of storage facilities, producers will not rush to sell their grain immediately, and the government does not need to rush to provide credit so that it all can be bought immediately.

Credits issued for state procurement have involved large real resource transfers. In 1992 federal credits for state procurement were of an amount equal to 4.5% of GDP. Federal procurement credits in 1993 fell to an amount equal to 1.5% of GDP, and the 1994 budgeted level is equivalent to 0.7% of GDP. See Table 7. While funds for state procurement have been falling, federal credit for the creation of federal and regional food funds remains the largest item of agricultural expenditure in the 1994 federal budget.

The 1994 budget explicitly notes that the budgetary funds for procurement are issued "on the basis that they are to be returned." Given inflation rates on the order of 10% a month, simply returning this money after six months or a year (a typical term for procurement credits) implies a significant real transfer to the recipients and loss for the budget. Moreover, credits provided for procurement in the past have not been repaid, as the special remark in the budget hints. In 1992, about two-thirds of grain procurement credits were not returned on time, and in 1993 more grain procurement credits were rescheduled. In 1993 41% of all credits issued for the agricultural sector were rescheduled.[15]

Private agricultural marketing and distribution companies, which have to borrow at commercial rates, face large disadvantages in competing with state procurement agencies trading on subsidized credit. A typical argument for the necessity of state procurement is that there are no other firms to take up the job. But private firms will not develop rapidly given the special credit lines for state procurement agencies. Moreover, the state procurement process perpetuates the system of centralized food deliveries to government

[15]Central Bank statistics show Rb 1797 bln. credits rescheduled in the agricultural sector in 1993, while Freinkman, Table 2, indicates that Rb 4385 were bln. disbursed.

institutions. The procurement agency's shipments to government organs can be used to offset the state credits it has already received. Thus payment is assured, and there is no incentive on either the buyer or seller's side of the market to make sure that the product is of good quality and not wasted.

Russian history provides some indication of the appropriate role for state credit provision. Before the Bolshevik Revolution, a time when communication and transport costs were much higher than they are today, the State Bank provided only 11% of the credit for grain procurement and distribution, while state railroads provided another 6%. Most of the state credit was directed to marginal markets in outlying areas. Private traders supplied credit in the major markets, and they supplied 83% of credit overall.[16] This is not surprising. Credit associated with grain wholesaling is a relatively simple form of short-term credit that does not require a sophisticated financial system. Such credit is often provided between private buyers and sellers as part of the terms of sale, and such arrangements contribute to the development of more sophisticated financial institutions.

The Administration of Grain Credits

The procurement of grain with state credit involves a single procurement agency and central bargaining over the price of grain. Roskhleboprodukt, a joint-stock company, handles all the state procurement credits for grain. By decree the price of grain is determined by negotiations among the Ministry of Agriculture, Roskhleb, the Ministry of Finance, the Price Committee, plenipotentiaries of the Agrarian Union, AKKOR, and other organizations representing the interests of producers and consumers. In recent years the Prime Minister has played a leading role in the price negotiations. In a market economy, only the purchaser of grain would be concerned about the price of grain. In this

[16]George Pavlovsky, *Agricultural Russia on the Eve of the Revolution*.

case the price of grain involves negotiations at the highest level of the government because the government has a large stake in the process through its provision of subsidized credit.

A key issue in the centralized price negotiations has been parity with the world price for grain. However, such parity is not appropriate given the centralized price setting mechanism.[17] The domestic grain supply curve facing the government is significantly more inelastic than would be the case for many small buyers in a large competitive market. If the government wants to buy a larger amount of grain, it has to pay a higher price. This is less true in the international market, since it is larger and there exists a variety of competing suppliers. Thus a cost-minimizing procurement program, if it involved international purchases of grain, would imply a higher price for internationally purchased grain than for domestic grain.

A simply example helps illustrate the point. Suppose that the domestic supply curve facing the state is $k_d S_d = P_d$ and the international supply curve is $k_i S_i = P_i$. Then a cost-minimizing procurement program involving both domestic and international purchases would entail a ratio of international to domestic prices of $P_i/P_d = (1+e_d)/(1+e_i)$. Suppose that Russia could buy as much grain as it wants on the world market without effecting the world price; this implies that $e_i=0$. Suppose that domestically, in order to procure 10% more grain, the government has to offer agricultural producers a 10% higher price; this means that $e_d=1$. Thus in the cost-minimizing procurement program grain will be procured internationally at twice the price of domestic grain.

Centralized price setting for grain inevitably leads to struggles over quantities, since prices are not allowed to clear the market. In particular, it is difficult to predict the amount of grain that will actually be procured, since that depends on how the fixed price

[17]The following section draws on ideas from Mstislav Afanasev, Anders Aslund, and Douglas Galbi, "Grain Prices and Procurement Policy", policy briefing, Macroeconomic and Finance Unit, Moscow, Aug. 1993.

relates to evolving conditions in the market. In the past the government has reacted by turning to imports to make up for procurement shortfalls. One implication of the price-setting process is that fluctuations in grain imports may have little relation to the overall fluctuations in the size of the harvest. A regression of the logarithm of grain imports in the USSR from 1963 to 1991 gives the following results:

$$LGI_t = .18 + .36\ LGI_{t-1} + .063\ TR_t + .20\ LHR_t \quad r^2=.60,\ \sigma = .71,\ DW=2.0$$
$$(5.1)\quad (.19)\qquad (.029)\qquad (1.0)$$

where LGI is the logarithm of grain imports, TR is a time trend, and LHR is the size of the harvest (standard errors are in parenthesis under the coefficients). The large standard error on the coefficient of LHR means that one cannot reject the hypothesis that there is no relationship between grain imports and the size of the harvest. Put differently, there is considerable volatility in grain imports that variations in the size of the harvest cannot explain. Such variations in imports are consistent with the implications of a centralized process of state procurement.[18]

The Regional Distribution of Grain Credits

While the logic of markets and competition indicates that state grain procurement credits suppress and distort the development of wholesale and distribution facilities, perhaps the most serious flaw in the current system of state grain credits is the lack of supervision and accountability.[19] In 1992 Roskhleb procured 26 million tons of grain at an average price of Rb 12000 per ton. Under the grain procurement program, Rb 620 billion of credit (equivalent to 3.5% of 1992 GDP) was issued to Roskhleb. This volume of

[18]One could argue that the independence between the variations in imports and the variations in the size of the harvest might reflect stockpiling in response to international price fluctuations. Particularly in the 1980's, this is unlikely given hard-currency government budget constraints.

[19]The following material on grain procurement credits draws upon Maria Amelina, Douglas Galbi, and Andrei Uspenskii, "The Distribution of Central Bank Credits for Grain Procurement," policy briefing, Macroeconomic and Finance Unit, Moscow, Sept. 1993.

credit amounts to about Rb 24000 per ton of grain procured, i.e., about twice the average price of grain. Thus at least half of the grain credits must have been used for purposes other than to pay producers of grain.

There are considerable regional disparities in the volume of grain credits. Moscow City, for example, received Rb 16.8 billion in grain credits while St. Petersburg received Rb 1.8 billion. All of these credits apparently went for grain distribution and processing, yet it is hard to understand why Moscow, with a population 80% larger than St. Petersburg, needed over 9 times as much credit for these purposes. There are also significant variations in credit volumes in regions where grain was procured. In Orlovskia and Riazonskiai Oblasts the amount of grain credit per ton of grain procured was Rb 11000 and Rb 14000 respectively. In contrast, Tul'skaia Oblast, which is geographically located between them, received Rb 26000 per ton of grain procured. Sverdlovskaia Oblast provides an extreme example. It received Rb 23 billion in grain credits while only 5.2 thousand tons of grain were procured in the oblast. Thus Sverdlovskaia Oblast received over Rb 4 million per ton of grain procured.

Part of grain credits issued in 1992 went for grain-processing industries. Bread-making is by far the most important such industry. Another part of grain credits went for grain procurement and distribution. Inter-regional shipments of grain compensate for the difference between grain used for bread production in a region and grain procured in the region (bread is not shipped over significant distances). Separating the credits for bread-making from those for grain procurement and distribution is a first step in understanding the regional pattern of grain credits.

Using the regional distribution of grain credit in 1992, one can estimate the average amount of credit associated with regional bread demand and the average amount of credit associated with procurement costs. Let B_r represent bread consumption in region r in millions of kilograms. Such data can be calculated from population and regional bread consumption figures available from Goskomstat. Let PC_r represent

procurement costs in millions of rubles. PC_r is equal to regional procurement volume times the average price per ton of grain in the region.[20] Then a simple model of the volume of grain credit CR_r in millions of rubles across regions is

$$CR_r = 33.8 + 13.1\ B_r + 1.23\ PC_r + U_r,\ \ r^2=.85,\ \ \sigma = 3655$$

$$(798)\quad (2.7)\qquad (.076)$$

where U_r is the unexplained component of the regional grain credit.[21]

These results are interesting in several respects. They indicate that an additional kilogram of bread consumption in a region was associated with an additional 13.1 rubles of grain credit. In contrast, the procurement of an additional ruble worth of grain was associated with an additional 1.23 rubles of grain credit. These results suggest that about a third of total grain credit in 1992 went to support bread-making industries.[22] The additional credit associated with grain procurement (0.23 rubles per ruble of grain procured) may have been to cover storage and distribution costs. These costs include the costs of interregional shipments of grain, which in 1992 had gross volume of 17.7 million tons and net volume 14.7 million tons.[23]

While the above model allows one to estimate some interesting parameters, in an economic sense it does not fit very well. The r^2 for the model is relatively high because there are big differences in population and procurement volumes across regions, and these are correlated with the volume of credit allocated. However, the residual for the model

[20]The interquartile range in the distribution of regional procurement prices was equal to 32% of the median regional procurement price.

[21]The number of regions that received grain credits is 71. This includes all the major regions of the Russian Federation. The model sample consists of these regions, minus Arkhangelskaia Oblast (Rb. 600 mil. credit), Republic of Karachaevo-Cherkesiya (Rb. 200 mil. credit), Sakhalinskaiya Oblast (Rb. 4000 mil. credit), and the Jewish Autonomous Oblast (Rb. 2170 credit). Procurement volume or price data for these regions were missing.

[22] There are about 150 million persons in Russia, and average bread consumptions is about 120 kg per year. Hence the model suggest that credits for bread-making were about Rb 244 billion.

[23] The volume of grain shipments to a particular region does not significantly affect the volume of credit received by the region. This is not surprising. Why should Roskhleb need additional net credit from the state in order to allow one branch of Roskhleb to buy grain from another branch?

amounts to 42% of the average credit disbursement among regions. Large differences in credits across regions remain unexplained by differences in regional bread consumption and regional procurement costs. For example, in Novgorodskiya oblast the amount of credit received was 332% higher than the above model can explain, while in Kaliningradskaya Oblast the amount of credit received was 81% lower than the model indicates (see Table 8). The inability of Ministry of Finance officials to account for these differences illustrates the lack of oversight and monitoring of the use of grain procurement credits. Anecdotal reports about the misuse of state credits provide further basis for concern. Most significantly, credit for grain provision in 1993 was reduced dramatically without significant change in the volume and means of state procurement of grain, and without creating any disruptions in food supply.

Table 8
Largest and Smallest Regional Recipients of Grain Credits in 1992
(in terms of the ratio of received credit to explained credit)

region	total population (ths.)	grain production (ths. tons)	grain procurement (ths. tons)	grain credit received (mil Rb)	unexplained surplus/deficit (%)
Largest Credit Surpluses					
Novgorodskiya Oblast	751	87	17.7	6550	332
Sverdlovskaiya Oblast	4707	1015	5.2	23000	242
Khabarovskii Krai	1812	22.2	0.5	6550	136
Republic of Khakasiya	567	165.1	0	1670	98
Amurskaya Oblast	1050	710.2	142.4	6940	91
Largest Credit Deficits					
Kalingradskaya Oblast	871	359.1	20.5	300	81
Moskovskaia Oblast	6646	613.7	39.7	1900	81
St. Petersburg	4990	0	0	1815	73
Permskaia Oblast	3091	910.4	90.5	1800	71
Tomskaia Oblast	1001	420.7	44.8	830	69

Source: Based on calculation from the above model.

Assuring that the population is able to purchase food is an important policy issue and one that is central to domestic economic and political security. The traditional Soviet approach to the problem is to provide massive state resources to organizations that in turn use the issue of state security to avoid public accountability in their use of state resources. The grain embargo imposed on the Soviet Union in 1980 undoubtedly played a key role in strengthening this approach with respect to grain. Now Russia has the opportunity to rebuild her food system on a stronger and more sustainable basis. In stark contrast to the central thrust of the Soviet system, the most necessary policy measure is to decentralize and privatize state procurement functions. With respect to grain, the federal government's

role in providing procurement credit needs to be reduced much further in order to stimulate the development of new marketing and distribution channels.

III. Agricultural Input Subsidies and Rural Development

Developments in agriculture's "terms of trade" with industry are difficult to identify in the rapidly changing Russian economy. Since mid-1992 consumer food prices relative to non-food prices have been rising, although recently there has been some downward movement (see Figure 1). Moreover, agricultural wages appear to have grown more slowly than industrial wages. On the other hand, agricultural procurement prices have risen much less rapidly than consumer food prices, and the agricultural input price index and the industrial producer price index have risen more sharply than consumer food prices (see Table 9).

Table 9
Terms of Trade Indicators
(index relative to Dec. 1991)

	Dec. 1992	Dec. 1993	May 1994
food consumer prices	22	197	315
agricultural proc. prices	13	117	159
agricultural wages	10	84	124
agricultural input prices	19	219	356
non-food consumer prices	27	199	292
industrial wages	13	121	347
industrial producer prices	35	348	619

Source: Goskomstat.

In interpreting these divergent trends, two points should be recognized. First, the ratio of food to non-food consumer prices is a significantly better quality statistic than the other statistics in Table 9. These two price indices are collected at the same time, in the same way, through direct surveys of prices observed in consumer markets. Wage statistics do not capture reductions in working time and late payment -- factors that have been significant throughout the economy. Moreover, the wage statistics and the input and industrial price indices are based on reports from enterprises, and hence are less reliable. Reporting meaningful prices for industrial intermediate goods is particularly problematic since markets for such goods are currently quite thin.

More importantly, agriculture's "terms of trade" is not an appropriate concept for thinking about the kinds of problems that are central to the current situation in Russian agriculture. Analyses of the "terms of trade" for agriculture assume implicitly that there is a stable production function connecting inputs to outputs in the various sectors of the Russian economy. But the essence of the transition problem is that reorganization of

production potentially offers very great increases in productivity. The important questions are the extent to which such reorganization is happening, and how to promote it.

Concern about the terms of trade of agriculture seems to have been reflected in input cost subsidies for agriculture. In 1993, according to government decree, agricultural producers were compensated for 30% of the costs of mineral fertilizers and chemical pesticides, 50% of the cost of fuel used in agricultural production, 50% of the cost of drought insurance, and 50% of the cost of farm equipment and machinery. From a general perspective of economic efficiency, such subsidies are undesirable because they distort price signals and encourage inefficient use of resources.

Table 10
Agricultural Input Cost Subsidies
(bil. of Rb)

	1992	1993	1994 budgeted
fuel	70	13	8
fertilizer	0	48	351
equipment	5	23	24
insurance	0	10	135
other expenses	76	35	285
share of federal. transfer to ag. (%)	8.0	1.9	6.7
real value ('94 Rb)	9204	789	803

Source: Freinkman, Government Financial Transfers, Table 2. Real valuation is based on average price increase of 896% in 1993 and 545% in 1994.

From a budgetary perspective, input cost subsidies are not significant. As Table 10 shows, the real value of input cost subsidies has fallen significantly since 1992. In the 1994 budget input cost subsidies amount to only 6.7% of budgeted funds for agriculture. The explanation for the small role of input cost subsidies is not hard to recognize. Agricultural producers have frequently argued that input suppliers, rather than agricultural producers, have largely benefited from these subsidies. Agricultural producers have thus favored producer subsidies over input subsidies.

While the overall volume of input subsidies has fallen, there has been a significant and undesirable shift in the composition of subsidies. The growth in fertilizer subsidies favors a particular type of rural activity and promotes a specialized industry likely to become dependent on the government program. Given the weaknesses of the state bureaucracy and the chaotic circumstances, the growth of insurance subsidies is likely to promote corruption and create significant unanticipated state liabilities.

An input subsidy program that can be effectively administered and that promotes rural development should subsidize a relatively standard commodity that is important in a wide variety of rural and non-rural activities. Fuel subsidies are probably the best form of input subsidy. Under the Soviet Union, energy prices were held far below world levels. This encouraged inefficient, energy-intensive production throughout the economy. While allowing energy prices to rise to world levels is a crucial reform, this may also be a policy area where some marginal support can be given to rural development. Fuel subsidies encourage more broad-based development that other forms of input subsidies. They are also easier to administer and monitor, since, among other factors, fuel prices for non-agricultural users provide a benchmark for cost comparisons.

The regional distribution of fuel subsidies in 1992 is both more easily and better accounted for than the regional distribution of grain procurement credits in the same year. A regression of regional agricultural fuel subsidies in region *r* (FS_r, in millions of rubles) on the use in agriculture of gasoline (G_r, ths. tons) and diesel fuel (D_r, ths. tons) in region *r* produces the model:[24]

$$FS_r = 27 + 3.2\ G_r + 1.5 D_r + U_r,\ \ r^2=.95,\ \ \sigma = 125$$

(25) (.63) (.33)

[24]The number of regions used in estimating the model is 72. These are all the regions for which subsidiy data was available, and include all the major regions of the Russian Federation.

This model indicates that the subsidy per ton for gasoline and diesel fuel was Rb 3200 and Rb 1500 respectively. The average wholesale prices of gas and diesel fuel in the second and third quarters of 1992 were Rb 5183 and Rb 3950.[25] Given the error bounds associated with the estimates, the model is consistent with a program of 50% subsidies for fuel use. In contrast to the model for grain credits, this model does not incorporate possible regional variations in fuel prices. Nonetheless, the model's r^2 is higher than that for the grain credit model, and the standard error amounts to 17% of the mean regional subsidy, in contrast to 41% for the grain credit program. This indicates that there is much more reason to believe that fuel subsidies are being directed to their intended purpose than are grain procurement credits.

Developments in energy supply in the agricultural sector also suggest the importance of support in this area relative to other forms of agricultural support. In the first half of 1994 purchases of gasoline and diesel fuel through retailers fell 51% relative to the level of the first half of last year. In contrast, the procurement of gasoline through direct contacts with fuel producers increased sharply; such supplies were 64% higher for gasoline and 140% higher for diesel fuel in the first half of 1994 relative to the first half of 1993.[26] These direct deliveries probably reflect barter deals between large agricultural enterprises and fuel producers. Such trading mechanisms are inefficient, perpetuate the power of political connections, and place new agricultural organizations at a disadvantage. Temporary subsidies for rural fuel outlets could serve as a transitional mechanism that would help support market-based purchases of fuel while lowering the costs of a broad range of rural activities.

[25]International Energy Agency, *Russian Energy Prices, Taxes and Costs 1993* (OECD: Paris, 1994).
[26]Goskomstat, Sotsialno-ekonomicheckoe poloxhenie Rossii Yanvar-Iyun 1994, p. 43.

IV. Production Subsidies and Agricultural Adjustment

A significant share of budgetary spending on agricultural falls under broad and vague programs for supporting agricultural production. In the 1994 budget 34% of spending on agricultural comes under a single line item allocating money "to finance expenses associated with resolving special problems in agricultural production." In 1993 and 1992 general support for agricultural producers was primarily through directed credits from the Central Bank. See Table 11. Such credits were issued in response to requests from producers. This is the traditional Soviet system in which the agricultural bosses petition the central authorities for money, plead their pressing needs, stress the importance of food to the people, and promise to produce results as soon as a sufficient amount of money is received.

Table 11
General-Purpose Federal Transfers to Agricultural Producers
(bln. Rb)

	1992	1993	1994 budget
total general-purpose transfers	736	2708	41174
of which			
livestock producers	166	13	0
investment	118	440	0
directed credit	417	1945	0
general transfers as share of total fed.ag. transfers (%)	37	40	34

Source: Freinkman, "Government financial transfers", Table 2. I have included transfers for social infrastructure and tax exemptions in general transfers.

While the generally ad-hoc nature of agricultural producer subsidies makes it virtually impossible to monitor their use and evaluate their effects, the program of support for livestock producers allows for slightly more detailed description and analysis. Funds for livestock subsidies come from both the federal and regional levels. As Table 12 indicates, subsidies as a percentage of procurement prices fell by about half from 1992 to

1993.[27] In constant 1992 rubles, total livestock subsidies (federal and regional) fell from Rb 203 billion to Rb 100 billion from 1992 to 1993. Within this overall fall there was a sharp shift in the source of subsidies. Federal subsidies, which in 1992 amounted to 82% of total livestock subsidies, became negligible in 1993 while regional subsidies increased three-fold in real terms.[28]

Table 12
Federal and Regional Livestock Subsidies

	Total Volume (bln. Rb)		Subsidy relative to procurement price (%)	
	1992	1993	1992	1993
milk	83.8	406	59	34
cattle	50.5	224.2	66	25
pigs	18.3	109.1	53	23
poultry	22.6	108.7	62	21
eggs	17	81.6	38	17
wool	0	24.8	0	56
sheep	5.2	13.9	182	33

Source: Ministry of Agriculture.

There is already some evidence that the cut in federal livestock subsidies from 1992 to 1993 is promoting market-oriented adjustment. Regressing the 1992-1993 milk output change on the output growth trend 1986-1992 and the level of subsidies in 1992 indicates that relatively high subsidies in 1992 were correlated with a relatively large output falls from 1992 to 1993. A movement from the first to the third quartile in the subsidy rate distribution in 1992 was associated with an additional one percentage point

[27]Livestock subsidies are supposed to be paid only for products delivered to the state. However, in the 1992 regional cross-section the subsidy rate per unit of milk and eggs produced is not significantly correlated with the share of milk and meat sold to the state. There is a positive correlation for eggs.

[28]In 1993 federal livestock subsidies amounted to 1.3% of total livestock subsidies.

drop in output from 1992 to 1993.[29] This effect is large relative to the overall median regional output drop of 1.8%.[30]

An economic interpretation of this evidence is that subsidies were supporting relatively costly production, and when these subsidies were cut such production fell. An important goal of federal agricultural policy should be to promote low-cost production and to encourage the transfer of resource from high-cost producers to more efficient uses. Cutting federal producer subsidies is an important step toward making production costs the key element of enterprise viability, and hence promoting efficient adjustment.

However, the long-term effect of pushing agricultural producer subsidies to the regional level depends significantly on political factors. Significant regional differences in subsidization will create incentives for producers in regions with a high rate of subsidization to use their cost advantage to capture markets in regions with a low rate of subsidization. The result of such action would be for regional agricultural subsidies to flow out of the region with the export of agricultural goods. This creates pressure on regional administrators either to restrict food exports or to lower subsidies. Regional administrators who restrict food exports create for themselves the opportunity to collect rents by granting particular exporters freedom of action. A regional leader with firm political control might even find it useful to raise agricultural subsidies.[31] This could allow

[29]The coefficient of the logorithm of the regional milk subsidy rate was -.050 with a standard error of .015. The sample for the regression was the 72 regions of Russia for which data was available (see above).

[30]This effect is not detectable for eggs, perhaps because the subsidy rate is significantly lower and he magnitude of the output drops higher. This suggests that factors other than subsidies are driving adjustments in egg production. I did not have data on meat output separated into cattle, pigs, and poultry for a similar analysis with respect to these products.

[31]The elasticity of subsidies with respect to regional fiscal expenditure (controling for the volume of procurement) is statistically significant and around 0.5. The share of a region's population in agriculture also has a significant effect of the subsidy rate. The political economy of regional agricultural subsidies in Russia deserves further exploration.

him to convert agricultural subsidies financed through general regional tax revenues into earnings for particular food trading concerns that served his personal interests.[32]

Two political factors are central for avoiding this very bad outcome. First, regional democracy has to be strong enough to recognize and restrain the cost of agricultural subsidies. Second, the federal government has to preserve the rights of individuals to participate in interregional trade. This second task offers the federal government the possibility of creating significant, market-oriented alliances, and should be taken up as a central part of federal agricultural policy.

[32]I am grateful to Lev Freinkman for pointing out this possibility to me.

V. Conclusions

The direction for agricultural reform in Russia is not to try to modify or improve programs of state support for agriculture; rather, the Russian government should try to move away from the whole concept of agricultural policy.[33] While many have noted the political power of agrarian lobbies,[34] less-well recognized has been the role of policy in shaping and defining these lobbies. Consider, for example the relationship between Roskhleb, the state procurement agency, and the agrarian lobby in Russia.[35] In 1992 and 1993 both Roskhleb and the agrarian lobby pushed for high procurement prices for grain. The agrarian lobby supported high grain prices since high prices benefited state and collective farms, while Roskhleb favored high procurement prices because high prices increased the volume of state procurement credits to Roskhleb. In 1994, when the government's willingness and ability to supply credit to Roskhleb was much more limited, sharp conflicts over procurement prices opened up between Roskhleb and its former partners in the agrarian lobby. The key point is that government agricultural policy itself plays a key role in creating and sustaining agricultural coalitions.

The government needs to move toward policies for rural development that foster articulation of and competition among a wide range of rural interests. Rural services, including the provision of human services such as health and education as well as financial services, input supply services, and output marketing and distribution, have significant potential for growth. In China the growth of rural non-agricultural enterprises has been

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[33]This is the central recommendation in Larry Karp and Spiro Stefanou, "Domestic and Trade Policy for Central and Eastern Euopean Agriculture", Centre for Economic Policy Research DP No. 814 (Nov. 1993). They emphasize that policy in Western Europe offers an unfortunate and inappropriate guide for policymakers elsewhere.

[34]Marek Dabrowski has called the farmer's lobby "probably the most anti-market oriented political group in Poland." See *Communist Economies and Economic Transition*, Vol 4:1 (1992), p. 68.

[35]This example is from Anders Aslund's forthcoming book on Russian reform.

the engine of economic change for the country as a whole. Given the much smaller share of workers in agriculture in Russia, one cannot expect a similar type of development.[36] Nonetheless, the important lesson for Russia is that the agricultural sector is not an appropriate focus for policy. Agricultural efficiency will come only with a much broader process of rural development.

[36]For an insightful analysis of the differences between Russia and China, see Jeffrey D. Sachs and Wing Thye Woo, "Structural Factors in the Economic Reforms of China, Eastern Europe and the Former Soviet Union", *Economic Policy*, 1994.